

Appln No. 10/044,413

Amdt date February 28, 2005

Reply to Office action of August 26, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1.-8. (Cancelled)

Claim 9. (Currently Amended) A method of decoding transmitted bits to recover a data signal, the method comprising:

receiving a stream of transmitted bits, the transmitted bits being encoded in accordance with an extended low density parity check matrix, the extended low density parity check matrix having an extended portion formed of a plurality of blocks of an original low density parity check matrix, each block having the same number of elements and elements within each block having the same relationship to each other within the original low density parity check matrix, the blocks of the extended portion of the original low density parity check matrix being formed of elements below a psuedo-diagonal of the original low density parity check matrix; and

iteratively decoding the transmitted bits.

Claim 10. (Currently Amended) A forward error correction system using iteratively decoded codes, the system comprising:

an encoder, the encoder encoding information symbols to form code symbols, the code symbols comprising sets of code symbols, a current set of code symbols comprising a number of code symbols formed of information symbols and a number of code

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symbols formed using information symbols, code symbols of a previous set of code symbols, and previously formed code symbols of a current set of code symbols;

a decoder, the decoder iteratively decoding the code symbols;-

wherein the number of code symbols formed using information symbols, code symbols of a previous set of code symbols, and previously formed code symbols of a current set of code symbols is formed using an XOR operation;

wherein the XOR operation is accomplished in accordance with a linked low density parity check (LDPC) code;

wherein the linked LDPC code is formed by extending a portion of an original LDPC matrix;

wherein the portion of the original LDPC matrix comprises a base portion, an upper extending portion, and a sideways extending portion;

wherein the base portion, the upper extending portion, and the sideways extending portion contain an equal number of elements;

wherein the base portion originates about a lower corner of the original LDPC matrix;

wherein each element of the upper extending portion is above each element of the base portion; and

wherein each element of the sideways extending portion is to the side of each element of the base portion.

Claims 11.-15. (Cancelled)

Claim 16. (New) The system of claim 10 wherein the portion of the original LDPC matrix comprising the base portion, the

Appln No. 10/044,413

Amdt date February 28, 2005

Reply to Office action of August 26, 2004

upper extending portion, and the sideways extending portion is formed of a number of blocks below a psuedo-diagonal of the original LDPC matrix.

Claim 17. (New) The system of claim 16 wherein the psuedo-diagonal delineates a series of blockwise elements about a lower left corner of the original LDPC matrix.

Claim 18. (New) The system of claim 17 wherein each of the base portion, the upper extending portion, and the sideways extending portion each form a block.

Claim 19. (New) The system of claim 18 wherein each block has its elements in the same relation to one another within the original LDPC matrix.

Claim 20. (New) The system of claim 19 wherein each block includes a plurality of elements.